 **BOSS**

RPS-10

**DIGITAL PITCH
SHIFTER / DELAY**

INSTRUCTIONS

Please read the instructions carefully.

The RPS-10 features two functions; Pitch Shifter and Digital Delay.

- When used as a pitch shifter, the RPS-10 allows pitch shifting freely from -1 to +1 octave.
- Setting up a keyboard, desired pitch shifting can be selected at once.
- The newly developed LSI enables to reduce the possible tremolo and time lag.
- When used as a delay machine, the RPS-10 allows to set the delay time from 25 to 800ms.
- The direct sound has frequency response from 20Hz to 30kHz and the effect sound from 40Hz to 15kHz.
- In both Pitch Shifter and Delay modes, the INV (invert) position serves to create tape recorder's reverse playback like effect.

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RADIO AND TELEVISION INTERFERENCE

Warning - This equipment has been verified to comply with the limits for a Class B computing device pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation.

However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.

These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non-Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402. Stock No. 004-000-00345-4

Bescheinigung des Herstellers / Importeurs

Hiermit wird bescheinigt, daß der/die/das

BOSS DIGITAL PITCH SHIFTER/DELAY RPS-10

(Gerät, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfügung)

funk-entstört ist.

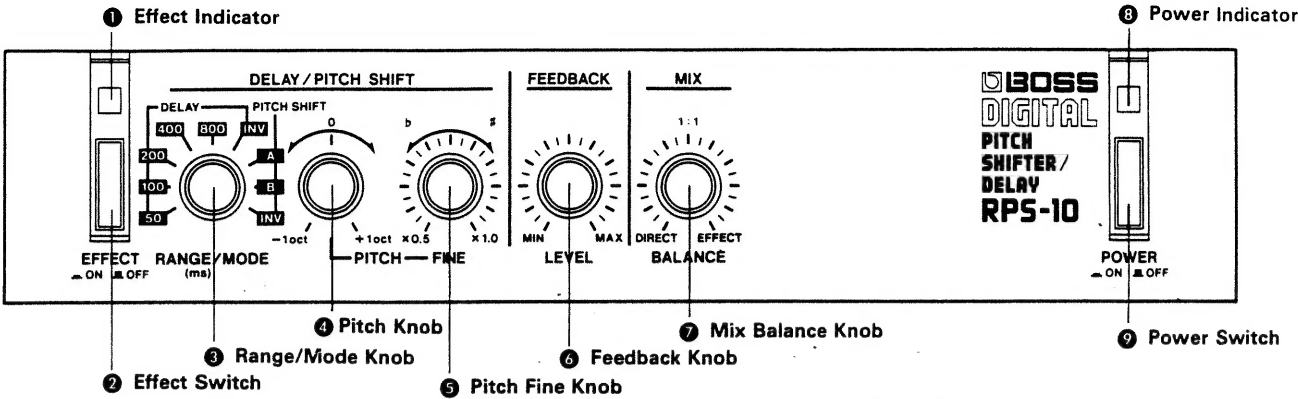
Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka / Japan

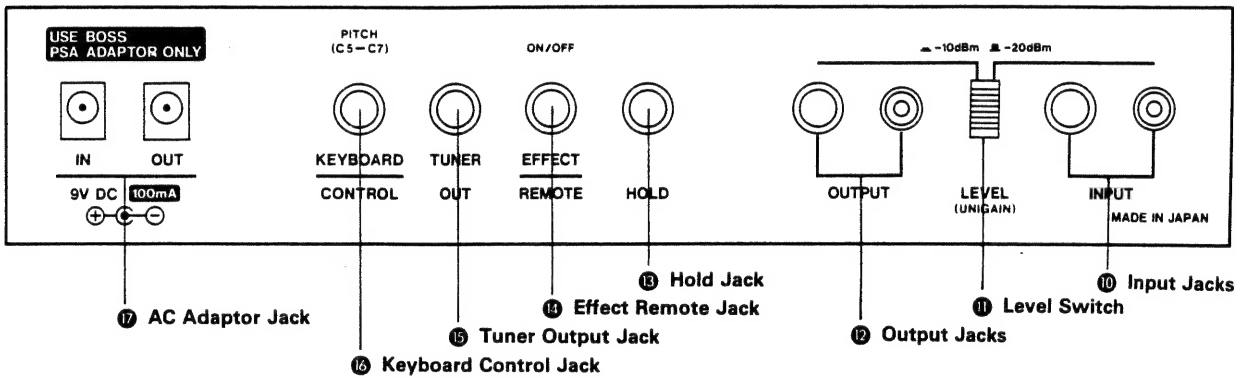
Name des Herstellers/Importeurs

PANEL DESCRIPTION

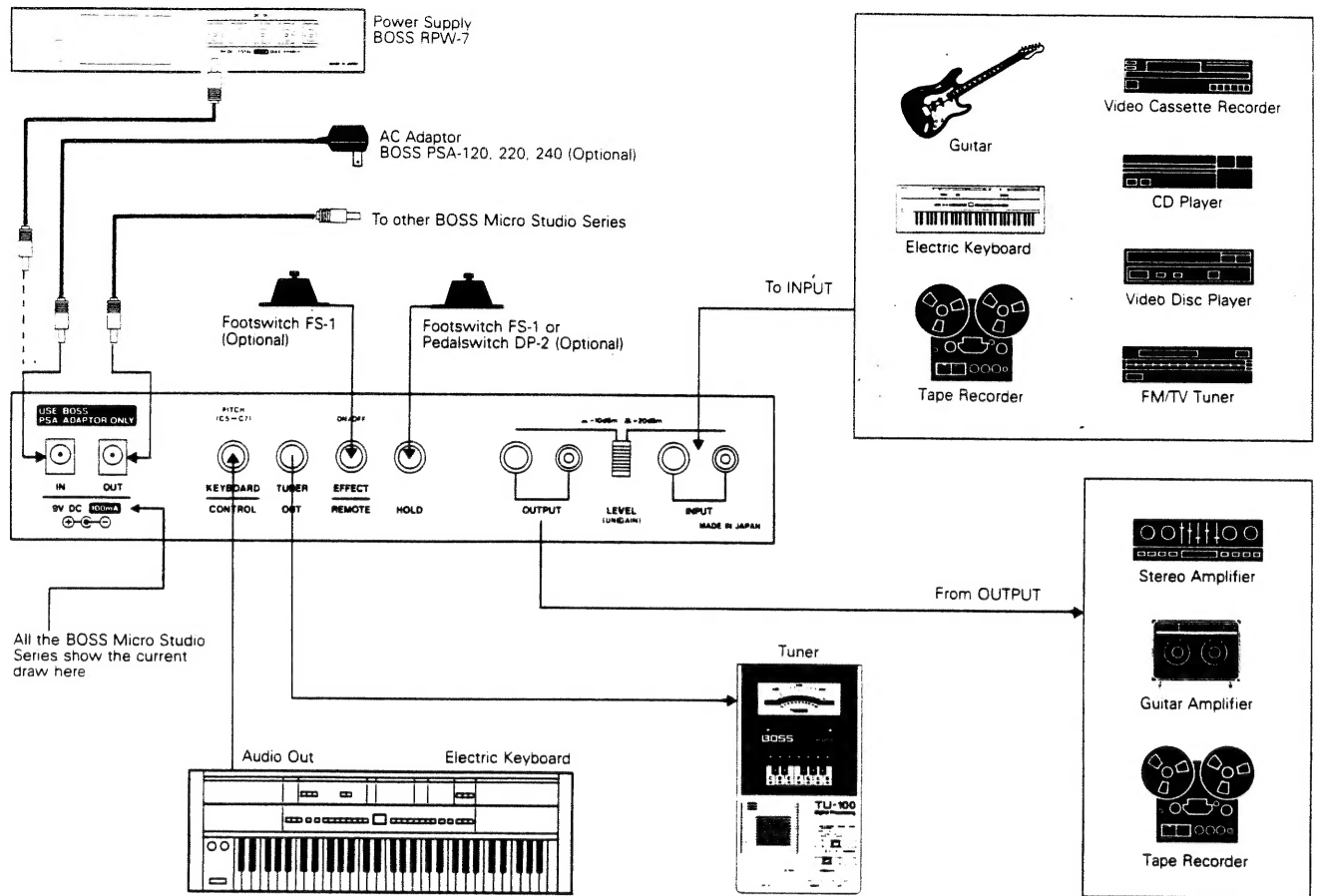
«Front Panel»



«Rear Panel»



1 CONNECTIONS



⑩ INPUT JACKS

The standard phone jack and the pin jack cannot be used at a time. If both are connected, the standard phone jack will work.

⑪ LEVEL SWITCH

Set this switch depending on the output level of the connected device. If the sound is distorted at the “-20dBm” position, change the switch to the “-10dBm” position.

⑫ OUTPUT JACKS

Both the standard phone and pin jacks can be simultaneously used.

⑬ HOLD JACK

By connecting the footswitch FS-1 (optional) to the Hold Jack, the effect sound can be sustained with the pedal operation.

* Please do not switch on or off the unit while the Hold effect is on.

⑭ EFFECT REMOTE JACK

By connecting the footswitch FS-1 (optional), the Normal or the Effect mode can be selected with the pedal operation.

* Please make sure that the Effect Switch is turned on.

2 PITCH SHIFTER

The amount of the pitch shifting can be set within a range of -1 to +1 octave.

The amount of the pitch shifting can be controlled either with the knobs on the RPS-10 or externally by the keyboard.

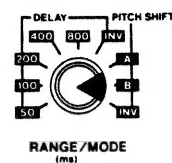
By connecting a chromatic tuner such as TU-12, TU-12H, TU-100, the amount of the pitch shifting set on the RPS-10 can be seen in the Display and the Meter of the tuner.

When all the necessary connections are made, turn the RPS-10 on.

* Turn the amplifier on in the end.

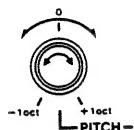
1. Pitch Shifting with the Control Knobs

- ① Set the Range/Mode Knob ③ to the Pitch Shift Mode (A, B or INV).



- Mode A:** In this mode, the delay time of the effect sound is short. Low frequency sound may not be properly pitch shifted, therefore may take on tremolo.
- Mode B:** In this mode, delay time is longer than the Mode A. Even a low frequency sound can be accurately pitch shifted. The tremolo is considerably reduced, creating stable effect sounds.
- INV Mode:** In this mode, a unique sound can be obtained by mixture of the tape recorder's reverse playback like effect and the pitch shifting effect.

- ② Set the amount of the pitch shifting with the Pitch Knob ④. Rotating the knob clockwise raises the pitch, and counterclockwise rotary lowers the pitch.



- ③ Adjust the amount of the pitch shifting with the Pitch Fine Knob ⑤. Rotating the knob clockwise raises the pitch and counterclockwise rotary lowers the pitch.



To set the amount of the pitch shifting precisely, a chromatic tuner (e.g. TU-12, TU-12H, TU-100) will be useful. Set up with the RPS-10, the tuner's display and meter will show the amount of the pitch shifted from the C. When the RPS-10 is in the normal mode, the Tuner Output sends out the signal that can be used for tuning an instrument.

* When the Pitch Knob is set to the center-click position, and the amount of the pitch shifting is set to zero cent using the tuner, the Pitch Fine Knob may not read correctly.

- ④ Set the Feedback Knob ⑥ to the MIN position. Rotating the knob clockwise will shift the shifted pitch even more, creating a special effect.



* As you rotate the Feedback Knob clockwise, the RPS-10 may oscillate.

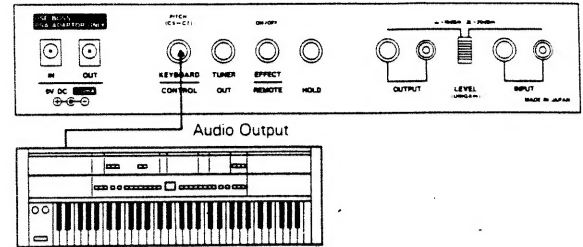
- ⑤ Using the Mix Balance Knob ⑦, adjust the volume balance of the direct and the effect sounds.



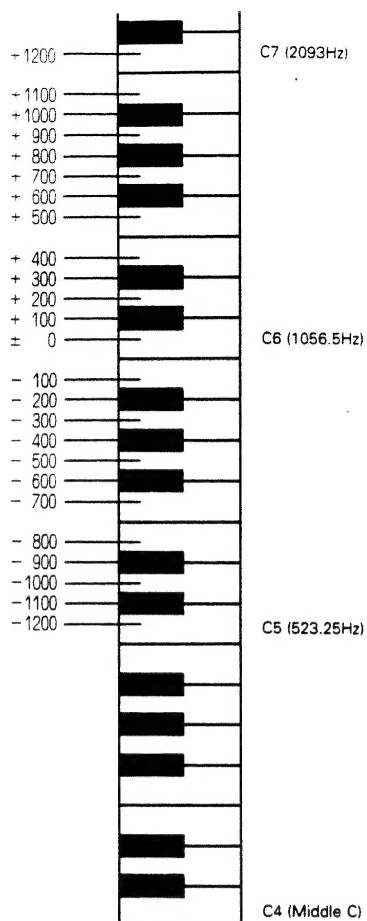
When the Mix Balance Knob is set to the center-click position, the volume balance is almost equal. At the fully clockwise position, only the direct sound is heard, and at the counterclockwise position, only the effect sound is heard.

2. Pitch Shifting with the External Keyboard

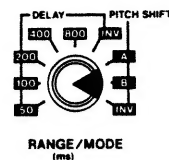
- ① Connect the keyboard to the Keyboard Control Jack ⑬.



- * While the keyboard is connected to the Keyboard Control Jack, the Pitch Knob ④ and the Pitch Fine Knob ⑤ do not work.
- * The ideal keyboard sound is that with a simple waveform (\sim , \wedge or \square), a short attack time and a long release time.
- * Make sure that the range of the sound from the keyboard is wider than C5 (523.25Hz) to C7 (2093Hz).
- * When using a polyphonic synthesizer, do not play more than one key at a time.
- * Do not use a complicated signal such as a chord, a sound with chorus effect, etc. Such sounds will not be accurately pitch shifted.
- * An electric guitar cannot be used for controlling the pitch shifting.
- * The amount of the pitch shifting for each keyboard is zero cent at C6 (1046.5Hz, two octaves higher than Middle C), and changes in semi-tone steps up to ± 1 octave (See the right picture).



- ② Set the Range/Mode ③ to the Pitch Shift Mode (A, B or INV).



- Mode A:** In this mode, the delay time of the effect sound is short. Low frequency sound may not be properly pitch shifted, therefore may take on tremolo.
- Mode B:** In this mode, delay time is longer than the Mode A. Even a low frequency sound can be accurately pitch shifted. The tremolo is considerably reduced, creating stable effect sounds.
- INV Mode:** In this mode, a unique sound can be obtained by the mixture of the tape recorder's reverse playback like effect and the pitch shifting effect.

- ③ Set the amount of the pitch shifting with the Keyboard connected to the Keyboard Control Jack ⑩.

- ④ Set the Feedback Knob ⑥ to the MIN position. Rotating the knob clockwise will shift the shifted pitch even more, creating a special effect.

FEEDBACK



* As you rotate the Feedback Knob clockwise, the RPS-10 may oscillate.

- ⑤ Using the Mix Balance Knob ⑦, adjust the volume balance of the direct and the effect sounds.



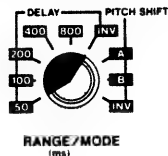
When the Mix Balance Knob is set to the center-click position, the volume balance is almost equal. At the fully clockwise position, only the direct sound is heard, and at the counterclockwise position, only the effect sound is heard.

3 DELAY

The delay time can be freely changed from 25 to 800ms. When all the necessary connections are made, turn the RPS-10 on.

* Turn the amplifier on in the end.

- ① Set the Range/Mode Knob to the Delay Mode (50, 100, 200, 400, 800 or INV).



- 50: Delay time of 25 to 50ms
- 100: Delay time of 50 to 100ms
- 200: Delay time of 100 to 200ms
- 400: Delay time of 200 to 400ms
- 800: Delay time of 400 to 800ms
- INV: Tape recorder's reverse playback like effect is obtained.

- ② With the Fine Knob ⑤, adjust the delay time.



- ③ With the Feedback Knob ⑥, set how many times the delay sound is to be repeated.

FEEDBACK



At the MIN position, a single delay is obtained.

- * As you rotate the Feedback Knob clockwise, the RPS-10 may oscillate.
- * The feedback circuits contain the HF Damp which serves to reduce higher frequencies as more delay sounds are repeated, creating natural echo sounds.

- ④ Using the Mix Balance Knob ⑦, adjust the volume balance of the direct and the effect sounds.

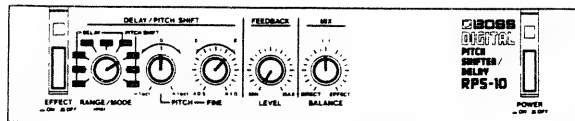
MIX



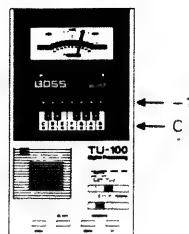
When the Mix Balance Knob is set to the center-click position, the volume balance is almost equal. At the fully clockwise position, only the direct sound is heard, and at the counterclockwise position, only the effect sound is heard.

4 SETTING EXAMPLES

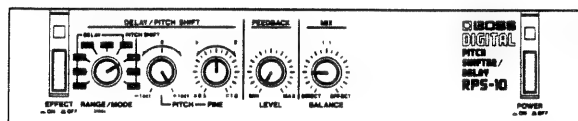
• Pitch Shift Chorus



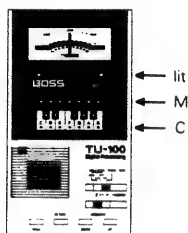
This is the chorus sound with little tremolo. If used for guitar's arpeggio, it will sound like 12 string guitar.



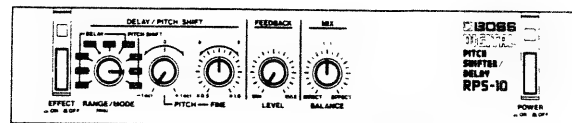
• Up Octaver



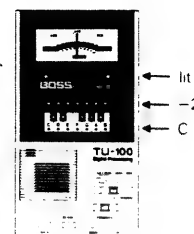
By mixing the direct sound with this octave upper sound, a metallic sound can be produced. It can be effectively used for guitar's cutting.



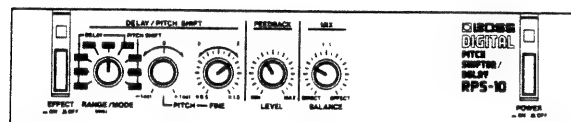
• Down Octaver



By mixing strings sound with this octave upper sound, rich sound can be produced.

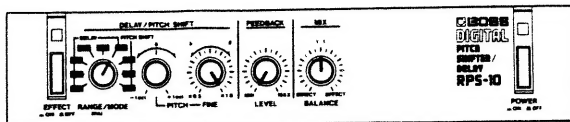


• Long Echo



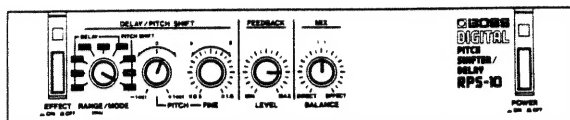
Spacious echo sound can be created.

- **Reverse Echo**

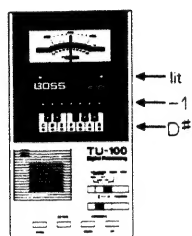


This is a tape recorder's reverse playback like effect.

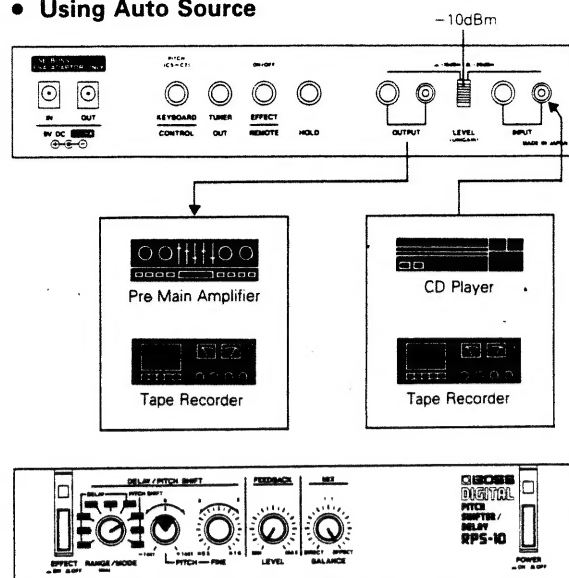
- **Infinif Score Raising Sound**



This is a mysterious impression effect.



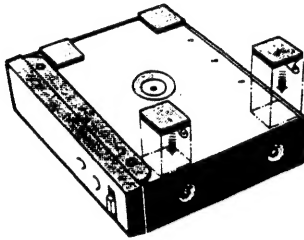
- **Using Auto Source**



When you copy the score of a tune or play the musical instrument to it, you can transpose the key by shifting the pitch of the entire music.

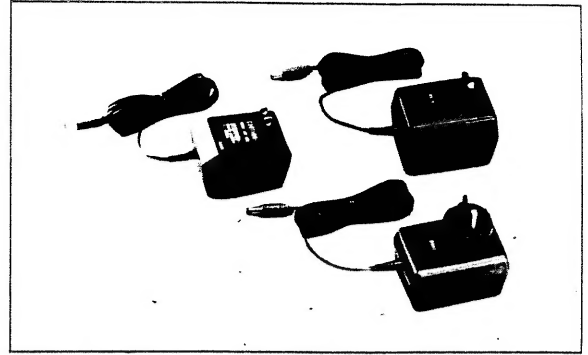
5 IMPORTANT NOTES

- For about 10 seconds after powered up, this unit does not function because of the muting circuits.
- Be sure to use the AC Adaptor BOSS PSA-120, 220 or 240 depending on the line voltage system in your country.
- When you use only an AC adaptor for supplying power to more than one unit, please be sure that the total current draw does not exceed 200mA. (The current draw of each unit is shown on its rear panel.)
- When the unit is not to be used for a long period of time, disconnect the AC adaptor from the wall socket.
- Avoid using the unit in extreme heat or humidity or where it may be affected by dust.
- When you use only Micro Studio Series without optional Rack Mount Adaptor "RAD-10", please attach the rubber feet. Refer to figure.



AC ADAPTOR BOSS PSA-120, 220 OR 240

Be sure to use the optional BOSS PSA series. Using any other adaptor will cause trouble.



RACK MOUNT INSTALLATION

The RPS-10 is one of the BOSS Micro Studio Series, and by using the Rack Mount Adaptor RAD-10, any two sets of the Series can be mounted in a standard 19" rack (EIA-1U). Remove the rubber feet (×4) from the units, then attach the units to the Rack Mount Adaptor RAD-10, then mount the whole set in the rack.

6 SPECIFICATIONS

Input Level/Input Impedance:

–20dBm/1M Ω , –10dBm/47k Ω

Output Level/Output Impedance:

–20dBm/2k Ω , –10dBm/2k Ω

Output Load Impedance:

Over 10k Ω

Pitch Shifting:

–1 to +1 octave

Delay Time:

25 to 800ms

Frequency Response:

Direct: 10Hz to 30kHz (± 1 dB)

Pitch Shift/Delay: 40Hz to 15kHz (± 1 dB)

Residual Noise:

Below –90dBm

(IHF-A, Level Switch –20dBm)

Pitch Shifting Controlling Input:

C5 (523.25Hz) to C7 (2093Hz)

Tuner Output (at Effect On):

C2 (65, 4Hz) to C4 (261.6Hz)

Controls:

Delay Range/Pitch Shift Mode

Pitch

Pitch Fine/Delay Time Fine

Feedback Level

Mix Balance

Switches:

Power

Effect (On/Off)

Level (–20dBm/–10dBm)

Indicators:

Power

Effect

Jacks:

Inputs (Standard Phones, Pin)

Outputs (Standard Phones, Pin)

Hold (On/Off)

Effect Remote (On/Off)

Tuner Output

Keyboard Control

AC Adaptor (In/Out)

Power:

9V DC (BOSS PSA-120, 220 or 240, RPW-7)

Current Draw:

100mA

Dimensions:

218(W) \times 169(D) \times 44(H)mm/

8 $\frac{9}{16}$ " \times 6 $\frac{11}{16}$ " \times 1 $\frac{3}{4}$ "

Weight:

900g/2 lb

Accessories:

DC Cord (0.5m)

Rubber Feet (\times 4)

OPTIONS

AC Adaptor BOSS PSA-120, 220 or 240

Pedal Switch DP-2

Footswitch FS-1

Rack Mount Adaptor RAD-10

Power Supply RPW-7

Micro System Rack BMR-5

*** Specifications are subject to change without notice.**

BOSS Micro Studio Series

RCL-10	Compressor/Limiter
RBF-10	Flanger
RGE-10	Graphic Equalizer
RPQ-10	Preamplifier/ Parametric Equalizer
RPH-10	Phaser
RDD-10	Digital Delay
RSD-10	Digital Sampler/Delay
RPS-10	Digital Pitch Shifter/ Delay
RPW-7	Power Supply

 **BOSS**
Products of Roland

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